

***Claim Summary***

By this Amendment, claim 11 has been canceled, without prejudice and without disclaimer of the subject matter. Claims 1-10 have been amended to correct informalities in the claim language and to more clearly define the invention, as discussed below. Applicants submit that the amendments made to the pending claims are clarifying and do not raise any new issues requiring further search or consideration, and thus request the Examiner to enter the amendments. Further, the present amendments place the present application in condition for allowance and/or place the claims in form for appeal.

Claims 1-10 are pending in the application. Applicants respectfully submit that all pending claims are in condition for allowance.

***35 U.S.C. § 112, Second Paragraph***

The Examiner rejected claims 1-9 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. *See* Office Action, p. 3. The Examiner asserts improper means plus function language, improper use of “calculating” a map, “intended” and “sub-means,” and other alleged deficiencies.

Although Applicants do not acquiesce in the rejections, Applicants have amended the claims for purposes of furthering prosecution. Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

***35 U.S.C. § 101***

The Examiner rejected claims 10 and 11 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Although Applicants do not acquiesce in the rejections, Applicants have canceled claim 11, which was directed to a computer program product, without prejudice and without disclaimer of the subject matter, for purposes of furthering prosecution. Thus, the rejection under of claim 11 under 35 U.S.C. § 101 is moot.

Applicants respectfully traverse the rejection with respect to claim 10, which is

directed to a method of correcting a segmented region of interest, and thus recites patentable subject (i.e., new and/or improved process). Accordingly, Applicants respectfully request withdrawal of the rejection of claim 10 under 35 U.S.C. § 101.

### **35 U.S.C. § 102 Rejection - Claims 1-11**

The Office Action of January 24, 2008, rejects claims 1-11 under 35 U.S.C. § 102(b) as being anticipated by DEMONCEAU et al. (U.S. Patent No. 6,389,310). Applicants respectfully traverse the rejection because DEMONCEAU et al. does not disclose each and every element of the claims.

Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

Applicants' silence on certain aspects of the rejection is by no means a concession as to their propriety. Rather, because the applied art teaches away from combining elements and fails to disclose at least one feature of the claims, for at least the reasons discussed below, Applicants respectfully submit that the rejections are improper and should be withdrawn.

#### **Claim 1**

Independent claim 1 recites, in part:

*“ ... means for segmenting a region of interest comprising said object of interest within said volume of 3D data into a segmented region of interest; ... means for determining a sub-regions map within said segmented region of interest .... ”*

DEMONCEAU et al. does not disclose at least these features. The Office Action asserts that column 28, lines 25-30 of DEMONCEAU et al. teach segmenting a region of interest and column 28, lines 30-50 of DEMONCEAU et al. teach determining a sub-regions map within the segmented region of interest. *See* Office Action, p. 4. As recited in claim 1, the region of interest includes the object of interest of the three-dimensional digital data.

DEMONCEAU et al. refers to determining multiple regions of interest, which include, for example, ventricles LV, RV and auricles LA, RA. *See* col. 20, lines 21-22; col. 28, lines 24-25. However, these regions of interest are not divided into sub-regions or a sub-regions map. Rather, previously determined segments derived from the image are subsequently sorted into the regions of interest. *See, e.g.,* col. 27, lines 55-57; col. 28, lines 26-29 and lines 39-41. In other words, DEMONCEAU et al. does not disclose determining a sub-regions map within a segmented region of interest.

#### Claims 8 and 10

Independent claim 8 recites, in part:

*“ A device for correcting a segmented region configured to be integrated in a medical imaging system which acquires a volume of data and to segment a region of interest around an object of interest within said volume of data, said device comprising: means for calculating a sub-regions map within the segmented region .... ”*

Independent claim 10 recites, in part:

*“ A method of correcting a segmented region of interest derived from a volume of three-dimensional (3D) digital data comprising at least one object of interest, the method comprising: calculating a regions map within the segmented region .... ”*

DEMONCEAU et al. does not disclose at least these features of claims 8 and 10 for substantially the same reasons as discussed above with respect to claim 1, since

DEMONCEAU et al. does not disclose calculating a sub-regions map within a segmented region.

Claims 2-7 and 9

Claims 2-7 and 9 each depend, directly or indirectly, from claim 1, and are therefore allowable for at least the reasons discussed above, as well as in view of their additional recitations.

For example, claim 2 recites that the means for determining the sub-regions map includes means for calculating watersheds to form a first sub-regions map within the segmented region of interest, and claim 3 recites that the means for determining the sub-regions map further includes means for calculating a map of distances, where the means for calculating watersheds forms the first sub-regions map based on said map of distances. The Office Action asserts that column 28, lines 30-50, of DEMONCEAU et al. discloses calculating watersheds, and that column 21, lines 1-25, and column 25, lines 10-25, of DEMONCEAU et al. disclose calculating a map of distances. *See* Office Action, pp. 4-5. However, although DEMONCEAU et al. discusses segmenting an image “with a 3D watershed algorithm” (col. 28, lines 33-35), it does not disclose performing the watershed algorithm on the allegedly disclosed map of distances.

**CONCLUSION**


No other issues remaining, reconsideration and favorable action upon the claims 1-10 now pending in the application are requested.

Appl. No. 10/550,344  
Amendment and/or Response  
Reply to final Office action of May 8, 2008

Reply under 37 CFR § 1.116-Expedited Procedure  
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If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

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